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The Effects of Positive, Mixed, and Negative Modelling in Teaching Empathy

by

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Date March 31, 1983

DEDICATION

This thesis is dedicated to my parents
Tom and Ann Eustace
who have supported me through
all my life experiences.

ABSTRACT

The teaching of behavioral skills using modelling or imitation as the instructional approach has found wide application in the teaching of interpersonal communication skills. Typically, the behaviors to be learned have been demonstrated by a model and then imitated by the trainees. In other applications both poor examples and good examples of the behaviors to be learned have been modelled so that the trainees could discriminate between the appropriate and inappropriate behaviors. The effects of these different modelling presentation methods on skill performance, conceptual understanding, generalization, and maintenance were investigated in this study.

The conditions investigated were: (a) the modelling of only positive, high quality examples of the behavior to be learned (positive modelling), (b) the modelling of both positive, high quality examples and negative, undesirable low quality examples (contrast modelling), (c) the modelling of only negative, low quality examples of the behavior to be learned (negative modelling), and (d) a control group for which the desired behavior was described.

Eighty-four undergraduate education students were randomly assigned to one of four conditions. The three experimental groups received taped training programs teaching the counselling skill of responding empathically. Three measures were used to evaluate learning. One measure involved ratings of the subjects' verbal responses to taped client statements to assess "performance" ability. The subjects were given a written test to determine their level of "conceptual understanding"; this required the rank ordering of various empathic responses. Finally, trainees' responses from a simulated interview were rated to determine "generalizability" of learning. A delayed post-test including all three measures was administered seven days after the treatment to determine maintenance of the skill.

Results of the study indicated that the positive only and the contrast modelling groups were significantly superior to the negative only modelling and control groups on all measures. On the initial and delayed conceptual measures, and on the initial measure of generalization the contrast modelling group was significantly better than the positive only modelling group. The negative only modelling group was significantly higher than the control group on the initial and delayed testings of both the performance and conceptual measures. For all treatment groups the level of skill was maintained at the same level after a delay of seven days. These results suggested that contrast modelling was superior to positive only modelling in promoting a conceptual understanding of the skill and in enhancing generalization of the skill to new situations.

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I. INTRODUCTION

Modelling or learning through imitation of others has occupied a dominant place within the area of instructional psychology. The efficacy of modelling as a powerful method for teaching new behaviors has been well substantiated (Bandura, 1969; Flanders, 1968). Consequently, the application of modelling techniques in a wide variety of practical situations has occured. Besides its utilization in psychotherapy, it has also been used extensively in training programs. Some of the areas of application have included: teacher training, counsellor training, assertiveness training, and social skills training. The present study focused on the modelling components in communications skills training programs, however, the significance of the findings may be applicable to other areas utilizing modelling techniques.

In an article reviewing the training and supervising of counsellors, Bernier (1980) noted that three basic training approaches could be identified. He described these as the "supervisor as therapist" orientation advanced by psychoanalytic practitioners, the "body of knowledge" model in which supervisors serve as expert instructors and teach didactically, and thirdly the "performance skills orientation" in which the supervisor trains counsellor behaviors using a competency based model. It is in this third approach that modelling techniques have been specifically utilized.

The performance skills orientation places particular emphasis on teaching specific skills for helping. A number of models and programs have been developed to teach these skills (Carkhuff, 1969a; Danish & Hauer, 1973; Ivey, 1971; Kagan, 1972). The term "microcounselling" has been used by Ivey (1971) to describe his approach that incorporates many behavioral training components in a systematic, logically programmed sequence. These training components have most often included: instructions, videotaped or audiotaped modelling of the skill, practice, rehearsal, feedback for the trainees, and an evaluation of performance ability.

Two major limitations of the microcounselling approach have been identified by a number of reviewers (Ford, 1979; Ivey & Authier, 1978; Thelen, Fry, Fehrenbach, & Frautschi, 1979). They have suggested that generalization to new situations and the maintenance over time of the skills taught has not been adequately demonstrated. Further evaluation of generalization and maintenance has been strongly recommended by these authors.

The utilization of microcounselling types of programs in the area of counsellor training has resulted in the generation of substantial research that has investigated their overall efficacy and the effectiveness of their various components. Research on the behavioral training components has generally shown instructions, modelling, feedback, programmed texts, and behavioral rehearsal to be effective in promoting skill learning (Ford, 1979; Matarazzo, 1978). Modelling has been found to be one of the more important components in terms of the programs' effectiveness (Ford, 1979). A large number of studies have investigated specific aspects of the modelling component in training programs as evidenced by a recent review in this area (Thelen, et al., 1979). Variables studied have included model characteristics, model consequences, media of presentation, and length of presentation.

One aspect of the modelling process has been identified by Ford (1979) as the message component. Research in this area, he suggested, should investigate effective ways in which the message can be presented. Generally, one of two methods for presenting the modelled message have been used in training programs. One of these involves modelling positive (good) examples only of the skill to be learned and in the other, both positive (good) and negative (poor) examples are modelled to provide a contrast. A third possible alternative is the presentation of poor or negative examples only. In the present study these three methods are referred to as: positive only modelling or POM, contrast modelling or CM, and negative only modelling or NOM.

The contrast modelling method has been recommended by Ivey (1971) because it promotes discrimination and identification of the appropriate behaviors. A number of training programs have utilized this method with positive results. Other training programs have utilized positive only modelling and found it to be effective (Calder, 1980; Cormier & Cormier, 1976; O'Toole, 1979).

Little research has been conducted to determine if one presentation method is superior to the other. In one study Alssid and Hutchison (1977) hypothesized that POM would be the preferable method because the negative examples in the CM method may interfere with learning. However, they did not find significant differences between CM and POM on measures of skill performance. In another study, Eskedal (1975) found that CM was significantly superior to POM on measures of cognitive learning. These results are consistent with the concept formation literature which suggests that both examples and non-examples of the concept being learned have to be present for concept formation to occur (Tennyson & Park, 1980). No studies have investigated the effects of CM and POM on both the level of skill performance and on the level of conceptual learning.

Recently, interest has been shown in the role of cognitive factors and attentional processes in the learning of new skills through modelling (Thelen, et al., 1979). Some studies have found that by introducing cognitive components, generalizability of the modelled behaviors to multiple situations and the maintenance of these skills over time could be enhanced (Berg & Stone, 1980; Derry & Stone, 1979; Eskedal, 1975; Glass, Gottman, & Shmurak, 1976; Richardson & Stone, 1981). These results suggested that an approach that acknowledges cognitive processes and incorporates current cognitive learning techniques into skill training will promote generalization and retention more effectively than approaches that focus on behavior alone.

Since modelling techniques have been found to be one of the most effective components of the skills training programs, it would appear that more systematic investigation of specific modelling presentation methods that incorporate cognitive factors may result in the development of programs with enhanced generalization and maintenance of the skills taught.

A. The Nature of the Problem

To date, little research has investigated the effects of specific modelling presentation methods. The studies that have been conducted were not comprehensive and the results were inconclusive. Investigations that have used performance of the skill as their dependent measure have generally found no difference between CM and POM treatments. Studies that have used cognitive learning or conceptual understanding as their dependent measure have found CM to be superior to POM. A third alternative method, negative only modelling, has not been investigated at all. It would appear that although positive modelling may be effective in teaching behavioral aspects of a skill, contrast modelling contributes to the learning of conceptual, cognitive aspects as well as behavioral aspects of the skill.

Failure to demonstrate generalizability of skills learned and their maintenance over time has been identified as a major problem of the skills training programs. The results of a number of recent studies have suggested that the incorporation of cognitive components into training programs may promote greater generalization and retention. Some of the cognitive components incorporated into these programs are similar in nature to the learning conditions provided by contrast modelling.

It was hypothesized by the present author that when comparatively complex behavioral skills are to be learned such as the communication skill of responding empathically, a training component that utilizes contrast modelling may be more effective than a training component utilizing positive only modelling. Specifically, where both methods may be effective in teaching the ability to perform the behavior, the contrast model may produce a greater conceptual understanding. Secondly, it is suggested that if a greater conceptual understanding is attained then generalization of the skill to new situations, and maintenance of the skill over time will be more likely to occur.

B. Purpose of the Study

The present study investigated the relative effectiveness of three different modelling presentation methods in teaching behavioral performance and conceptual understanding of the communication skill of responding empathically. The different modelling presentation methods compared were: positive only modelling, contrast modelling, and negative only modelling. The study also examined the efficacy of each of the presentation methods in promoting generalization of the skills to new situations. Finally the maintenance or retention of the skill over time for each presentation method was measured.

II. LITERATURE REVIEW

In the area of instructional and training psychology there has been a trend towards the identification of specific components of the instructional process, with the purpose of applying current learning theory to training approaches and systems. The present study addresses the use of modelling or imitation in the instructional process. Two related issues are of particular interest. The first is the effect that different modelling presentation methods may have on performance and conceptual understanding of the skill being taught. The second issue of interest is the effect that different modelling presentation methods may have on the maintenance of the skill over time and generalization of the skill to new situations. In this chapter, the research relating to these two issues is reviewed. The chapter is organized in the following manner: (a) a review of literature relating to modelling and modelling presentation methods, (b) a review of literature relating to generalization and maintenance, and (c) a review of literature relating to specific issues in the study.

A. Modelling

The term "model" has been defined by Rosenthal and Bandura (1978) as "any stimulus array so organized that an observer can extract and act on the main information conveyed by environmental events without needing to first perform overtly," (p. 622). Although a model can be animate or inanimate, models used in the area of skills training have typically been humans performing in vivo demonstrations or else recordings of such demonstrations.

In the literature and research investigating modelling effects, prime emphasis has been placed on the efficacy of modelling in teaching behaviors and skills. Modelling, combined with instructions and rehearsal has been shown to be an effective method for teaching various behavioral skills (Ford, 1979; Matarazzo, 1978; Thelen, et al., 1979). The criteria by which this effectiveness has been assessed has usually involved the measurement of behavioral performance. However, little interest has been shown to date in other types of learning that occur during the modelling process. Bandura (1977) has delineated some of the other competencies that the modelling process can develop. As well as motor acts, people learn "judgmental orientations, linguistic styles, conceptual schemes, information processing strategies, cognitive operations, and standards of conduct," (p. 42). Typically, in the area of training, modelling has been treated as a unidimensional phenomenon with unidimensional outcomes, these being performance of motor skills and behaviors. One focus of the present study will be on other competencies learned during the modelling process, specifically conceptual learning.

While in theory, the modelling process has been construed as a complex phenomenon (Bandura, 1977), in practice (in the training research) some component processes in modelling have been neglected. In discussing this issue, Ford (1979) has defined four component variables of the modelling process. These are: the message, the valence, the model, and the medium.

Message variables include the presence or absence of attentional cueing, the demonstration of effective and/or ineffective behavior, and the different presentations of target behaviors and contexts. The valence refers to the meaningfulness of the modelling to the viewer and is determined by the consequences (positive or negative) subsequent to engaging in the target behavior. This has been labelled "vicarious reinforcement" by Bandura (1969).

Model variables include certain model characteristics that the viewer does or does not value, such as status, sex, age, or physical attraction. The different media for presenting modelling in training include: live demonstrations, videotape, audiotape, and written descriptions.

While some of these variables have been investigated intensively, others have not been studied in much detail. The present study investigated two of these neglected variables, the first being a process variable and the second being an outcome variable. The process variable involved the demonstration of effective and/or ineffective behaviors and has been called the modelling presentation method in this study. The second involved the types of learning that occur when behavioral skills are being taught by modelling. The following sections review the literature regarding these two variables and the relationship between them.

Modelling Presentation Methods

The term "modelling presentation method" refers to the way in which the message is presented or modelled to the viewer. In outlining his microcounselling approach, Ivey (1971) described one modelling presentation method. He recommended that both appropriate and inappropriate demonstrations of the event to be learned be modelled. In this way, he argued, it is "possible to identify the specific behaviors which comprise effective demonstrations of the behaviors in question," (Ivey & Authier, 1978, p. 309). A number of training programs have utilized this approach which shows trainees both good and poor models with explicit cueing to teach the trainees to accurately discriminate between the two quality levels (DiMattia & Zimmer, 1972; Eskedal, 1975; Frankel, 1971; Richardson & Stone, 1981). In the present study, this approach is called contrast modelling (CM). However, many other training studies have demonstrated only appropriate therapist behaviors (Calder, 1980; Cormier & Cormier, 1976; O'Toole, 1979; Robinson, Froehle, & Kurpius, 1979a). This has been called positive only modelling (POM) in the present study.

The empirical evidence for favoring one method over the other has been equivocal. The following two sections review studies which investigate these two presentation methods.

Research Supporting Positive Only Modelling.

In one study addressing this issue, Alssid and Hutchison (1977) compared a group shown a good (positive) video model, a group given both a good and poor (contrast) video model, and a control group. All the groups were taught the skill "asking open-ended questions". It was hypothesized that positive video modelling would result in greater learning than a contrast video model. This hypothesis was based on a research study in the area of school teaching (Berliner, 1969) which found that groups of teacher trainees viewing a positive video model performed better in transfer to new situations than groups viewing a contrast video model. Berliner suggested that negative modelling may have actually interfered with learning. Berliner's results however did not find significant differences between the two groups on post-test measures of the skill being taught.

Similarly, in the Alssid and Hutchison study, no significant difference was found between the two methods of presentation although only the positive model group was significantly different from the control group in terms of gains made from pre- to post-test.

Alssid and Hutchison concluded that their results supported the hypothesis that positive only modelling resulted in greater learning than contrast modelling and that the latter method may have actually interfered with learning at an introductory level of training. However, inspection of their group means data shows that the contrast model group actually performed at a higher level than the positive only model group on the post-test measures. Analysis of post-test measures only would likely show that both experimental groups were significantly better than the control group. Furthermore, frequency data taken on asking closed-ended questions showed that the contrast model group improved more than the positive only model group. The difficulty in demonstrating significance in this study could likely have been due to the small number of subjects in each group (n = 9). It was felt that a more conservative conclusion would have been that no significant differences were found between the two methods.

The major arguments made by researchers in favor of positive only modelling could be summarized as follows: (a) positive only modelling teaches performance skills more efficiently than contrast modelling, and (b) the inappropriate model examples in the contrast modelling approach may interfere with learning by teaching the inappropriate skill. It would appear however, that there is not unequivocal support for these arguments in the literature.

Research Supporting Contrast Modelling.

Although no literature is available that directly supports contrast modelling, support can be found in related studies. In investigating the effects of modelling on the cognitive learning of counselling techniques, Eskedal (1975) compared a group receiving modelling with attentional variables, a group receiving positive only modelling, a control group with attentional variables, and a control only group. The attentional variables consisted of verbal cues by a commentator identifying appropriate and inappropriate empathy responses (the skill being taught) made by the model. On a measure of cognitive learning, both treatment groups were significantly better than the control groups and the treatment group with attentional cues was significantly superior to the positive only modelling group. This study supported the use of attentional cues with modelling to enhance cognitive learning of empathy.

In a study of a different nature, imitation was used to correct children's spelling errors (Kauffman, Hallahan, Haas, Brame, & Boren, 1978). In this study, imitating the children's errors and then showing correct models was found to be a better method for teaching spelling than showing correct models only. It was suggested that contrast examples helped focus the children's attentions on the specific ways in which the incorrect response differed from the correct one.

Both of these studies exphasized the use of contrast modelling for teaching cognitive or conceptual learning. To examine the validity of this assumption, the following section looks briefly at some of the literature on concept formation.

Concept Formation.

Much of the conventional concept attainment research does not address the learning of concepts per se but investigates rule and attribute learning (Horton & Turnage, 1976). However, Mervis and Rosch (1981) and Rosch and Mervis (1975) have developed a model relating to the formation of concepts. They proposed that categories (or concepts) develop around a prototype or central example of the category. The learner generalizes from a prototype, which bears a strong similarity to class members, to other examples. From a prototype which bears little similarity to class members, the learner discriminates non-examples. It is generally accepted in this and other concept formation theories, that the presence of examples and non-examples is essential for concept formation in the absence of other information (Tennyson & Park, 1980).

In one of the numerous studies aimed at demonstrating this, Tennyson (1973) compared four conditions containing examples and non-examples and four conditions in which the non-examples were excluded. He hypothesized that the removal of the non-examples would eliminate any observable learning of the concept. Random response patterns obtained on the post-test for the groups from which the non-examples had been excluded supported this hypothesis. The subjects failed to acquire the concept when presented with examples alone. Tennyson concluded that without non-examples, concept learning is incomplete, even when divergent and easy to difficult examples are provided. These concept acquisition studies were carefully controlled analogue type research and the concepts taught were designed to be easily defined, therefore, the applicability of these findings to practical teaching situations should be made with caution.

If the findings of these experimental studies are applicable to actual teaching situations, it would follow that including positive and negative examples (examples and non-examples) in a modelling sequence would allow the trainees to discriminate between which of the dimensions of the material presented are relevant and critical, and which are not. This literature would support the hypothesis that contrast modelling enhances conceptual learning of the skill being presented.

Preliminary Research Project

On the basis of the literature reviewed here, a pilot research project was conducted (Eustace, 1981). This study investigated the differential effects of two modelling presentation methods, positive only modelling and contrast modelling. The purposes of conducting this pilot study were to: (a) determine the feasibility of producing taped skills training programs that utilized POM in one condition and CM in the other, (b) compare CM and POM on measures of performance and on measures of conceptual understanding, and (c) develop a test to measure conceptual understanding of the skill being taught.

Thirty undergraduate education students were randomly assigned to either a POM treatment condition, a CM treatment condition, or a control group. The two treatment groups received audiotaped training programs (either POM or CM) teaching the communication skill of responding empathically.

The results of this pilot study indicated that, on the performance measure, both treatment groups were significantly better than the control group. On the conceptual measure, only the CM group was significantly better than the control group. There were no significant differences between the two experimental groups on either of the measures.

These results supported the hypothesis that CM teaches conceptual understanding but were inconclusive regarding its superiority to POM in doing this. More conclusive results might be obtained by a study utilizing a larger sample, by utilizing improved programs and measures based on knowledge gained from this pilot study, and by investigating other possible modelling presentation methods.

Negative Only Modelling

Up to this point, only two modelling presentation methods have been considered, POM and CM. Another alternative is also possible, that is, the modelling of poor or negative only examples (NOM).

One study utilizing low level empathy modelling (or NOM) was conducted by Perry (1975). She compared a high empathy model group with a low empathy model group on written performance measures and on an actual interview performance measure. The high empathy model group showed significantly higher levels of empathy on the written performance measures, but no difference was found on the interview measure. Significant in this study was the fact that the low level empathy group subjects were told that what they were hearing were high empathy examples. Had they known that these examples were of how not to respond, their performance might have been substantially improved.

In a similar study (Pierce, Carkhuff, & Berenson, 1967) trainees were exposed to either a high functioning counsellor or a low functioning counsellor. The group exposed to the high functioning counsellor showed significantly superior counselling skills to the group exposed to the low functioning counsellor. Again, had the trainees known that the low functioning counsellor's behaviors were inappropriate, they might have been able to improve their performances. When using good and bad examples it would seem to be important to include cues for the trainees that clearly differentiate good and poor examples.

In practice, it would not be reasonable to construct a training program consisting of negative examples only. However, in investigating modelling presentation methods there are two reasons for including an NOM group where the subjects are aware that these are examples of how not to behave. Firstly, if an NOM group were not included, it could be argued that any differences between the POM and the CM groups might be due only to the addition of the NOM factor in the CM condition. Thus, it could not be argued that the difference was due to the contrast provided by the combination of positive and negative examples in the CM group.

Secondly, the effects of having an NOM component in a program are unknown. Researchers favoring POM approaches have argued that negative modelling interferes with learning and would therefore expect than an NOM group would be worse, or no better, than a control group. On the other hand, it could be argued that an NOM group would be superior to a control group because the negative examples provide information on how not to respond, eliminating some of the possible response alternatives that would be available to the control group.

For these reasons, it was considered appropriate to include an NOM group in a study investigating modelling presentation methods.

Summary

Proponents of the CM approach have argued that this method permits identification and discrimination of the specific behaviors which comprise the appropriate and inappropriate demonstrations, thus leading to greater learning. Contrary to this, proponents of the POM method have argued that including negative examples interferes with learning. It seems clear that this issue has not been adequately resolved empirically. The studies that have addressed this issue cannot be meaningfully compared because of a number of methodological differences. The studies supporting POM utilized measures of behavioral performance, whereas the studies supporting CM used measures of cognitive learning. Other studies not investigating this comparison, but using one of the two methods, have shown that both methods successfully teach performance of the skill.

The review of some of the concept formation literature would suggest that the inclusion of both positive examples and negative, or non-examples, are necessary for concept learning to occur. The preliminary research project conducted by the present author lent support to this hypothesis. In reviewing the literature regarding NOM, it was decided that inclusion of such a group was necessary.

On the basis of this literature, the following questions were proposed:

1. Will a CM group score higher than a POM group on a measure of conceptual understanding.
2. Will an NOM group score higher than a control group on both a performance and a conceptual measure.

The following section discusses the second major issue to be investigated by the present study.

B. Generalization and Maintenance

A number of limitations to the microcounselling approach to training have been suggested (Ford, 1979; Ivey & Authier, 1978). One limitation concerns generalization of the skill taught to new situations. While mastery of the skills taught has usually been demonstrated in experimental situations, only in a few studies have the skills been shown to generalize well to actual practice (Ivey & Authier, 1978; Thelen, et al., 1979). Only a small percentage of the studies reviewed by Thelen, et al. (1979) actually assessed generalization at all. These authors stressed that more generalization measures that appraise the subjects' behaviors in more naturalistic settings need to be taken.

Similar problems have been found with the maintenance over time of the skills taught. In a review of the literature, Ford (1979) reported that only six of forty relevant microskills studies assessed skill maintenance at long-term followup. Any research finding regarding immediate measures would be significantly more valuable if generalization to new situations and maintenance over time could be also demonstrated. Generalization and maintenance was the second major issue addressed by the present study. The following section reviews some of the literature which has investigated generalization and maintenance in training programs.

Literature on Generalization and Maintenance

Generalization has usually been assessed by measuring trainees' performance during an actual or simulated therapeutic interview. To determine the level of maintenance, measures have typically been repeated after durations of five days to six months following training.

In a study by Moreland, Ivey, & Phillips (1973) a microcounselling training approach was compared with a traditional training approach using second year medical students. Six counselling skills were taught and subjects were asked to do pre and post training interviews with real patients to assess generalization of the training. The results showed that while both groups became better interviewers, the microcounselling group improved more than the comparison group.

Haase, DiMattia, and Guttman (1972) conducted a one year follow-up study with the same paraprofessional subjects who had been taught microcounselling skills in an earlier study (Haase & DiMattia, 1970). The paraprofessionals at that time were working in counselling situations and were not receiving training or close supervision. They found that non-verbal communication skills and expression of feeling had been maintained at an improved level. Verbal following and reflection of feeling ratings had regressed, although they were higher than pre-training levels. The authors suggested that those skills not in use on the job are likely to be forgotten.

In a similar study, Gluckstern (1973) trained paraprofessionals in microcounselling skills. The trainees worked actively with clients and took part in monthly follow-up training sessions. The level of performance was still maintained after six months. Guttman and Haase (1972) investigated the generalization of attending skills from training to actual therapy sessions. Results showed that the significant increments made in training decreased to some extent during the first week of counselling, but increased again by the third counselling session. Levels of performance in the counselling sessions did not, however, reach post-training levels.

In a comprehensive study of the maintenance of trained skills as used in actual therapy sessions, Spooner and Stone (1977) measured frequency of counselling skills used by counsellor trainees at the end of the training course, during the practicum, and again three months after they were working as counsellors. They found that the more complex skills were often not maintained after training was completed. Other skills such as reflection, interpretation, and confrontation were maintained at the same or slightly lower level.

Although these studies have shown that some skills taught by training programs did generalize and were maintained, on the whole, support for generalization and maintenance has not been strong (Ford 1979). This has partially been due to the lack of studies evaluating these issues. Various suggestions have been made on how to improve generalization and maintenance by such means as increasing practice time, providing follow-up practice programs, giving follow-up training in new situations, providing workbooks, and focussing on cognitive factors such as attentional and retentional processes (Ivey & Authier, 1978; Richardson &

Stone, 1981). The effects of cognitive factors relates to the present study and is examined in the following section.

Cognitive Factors

Counsellor trainers with a cognitive behavioral perspective have suggested that a focus on cognition in modelling would facilitate generalization and retention (Eskedal, 1975; Stone, 1980). This is based on the assumption that "a method that incorporates cognitive strategies and rules as well as discrete skills will foster generalization (situations) and retention as opposed to a singular focus on discrete skills", (Richardson & Stone, 1981). A number of studies have lent support to this hypothesis (Berg & Stone, 1980; Derry & Stone, 1979; Eskedal, 1975; Glass, Gottman, & Shmurak, 1976). Cognitive factors investigated to date have included the use of: cognitive adjunctive procedures (Richardson & Stone, 1981), the use of attentional cues (Eskedal, 1975), and the use of cognitive behavior modification techniques to promote retention (Derry & Stone, 1979).

One study examined the generalization effects of three methods of counsellor training: cognitive behavioral, behavioral, and programmed learning. The behavioral and programmed learning groups received traditional microcounselling training teaching reflection of feeling and confrontation. The cognitive behavioral group emphasized cognitive strategies as well. The cognitive strategies were based on Meichenbaum's self-instructional model. On follow-up measures taken during an actual interview four weeks after treatment, the cognitive behavioral group demonstrated significantly better skill performance than the programmed learning group. This was the only significant difference found between groups (Richardson & Stone, 1981). Similar results demonstrating the efficacy of cognitive components in training programs were obtained by Berg and Stone (1980), Derry and Stone (1979), Eskedal (1975), and Glass, et al. (1976). Thus, there are indications that approaches which incorporate cognitive learning techniques into skill training may promote generalization and retention more effectively than approaches which focus on behavior alone.

On the basis of this research the assumption was made that a training approach that improves cognitive or conceptual understanding would also promote generalization and retention, the rationale being that students who have developed a better conceptual understanding of the skill would be able to apply it more effectively in different situations and would be able to remember it better over a period of time. A major hypothesis in the present study was that contrast modelling would teach conceptual or cognitive understanding of the skill being taught more effectively than POM or NOM. If this hypothesis was supported, it was suggested that the CM group would be superior to the other groups on measures of generalization and maintenance. Thus, two reasons exist for assessing generalization and maintenance in this study: (a) to determine the overall effectiveness of the present study's training programs in enhancing generalization and maintenance as recommended by Thelen, et al. (1979), and (b) to determine the differential effects of the treatment programs in enhancing generalization and maintenance.

C. Specific Considerations in the Current Study

To evaluate the issues raised in the preceding literature review, three training programs were developed to teach a specific communication skill. Three measures were used to assess the effectiveness of each of the programs in teaching the target skill. The following sections discuss two specific considerations in the current study: the target population, and the nature and assessment of the skill being taught.

The Population

The target population for the present study was teachers in training. Although empathy has traditionally been associated with psychotherapy and counselling, there has been a substantial emphasis placed on the need for educators to be trained in affective and interpersonal processes (Rogers, 1969).

A number of studies have demonstrated the effectiveness of empathy training for teachers. Ivey and Rollin (1972) developed a curriculum in human relations training for teachers in training. This curriculum utilized a microcounselling approach to teach a variety of communication skills including attending behaviors and responding empathically. Similar programs have been developed for teachers by other trainers (Fraser & Vitro, 1975; Goud, 1975; Hawn, 1977; Kerrebroch, 1971; Sweeney, Austin & Engel, 1981).

There is also evidence to suggest that training in empathy can increase the effectiveness of teachers. Dixon and Morse (1961) reported that student teachers who had "high" empathy were rated by students and by supervising teachers as superior to those who had "low" empathy. Aspy (1969) found that levels of empathy shown by third-grade teachers in the classroom were positively related to the cognitive growth of their students as measured by the Stanford Achievment Test. Other studies have also shown a positive relationship between high teacher empathy and student progress (Harbach & Asbury, 1976; Lewis, Lovell, & Jesse, 1965). This literature would suggest that students can benefit through improved learning environments from teachers who have had training in empathy and human relations. It has been suggested that teaching counselling skills assists teachers in listening more effectively to students and in developing a more facilitative teacher-student relationship (Ivey & Authier, 1978).

The Skill to be Taught

The communication skill taught by the training programs in this study was that of responding empathically. The choice of this skill was based on the following points: (a) empathy training has been shown to have a number of benefits for teachers and their students in the school environment (Aspy, 1969), (b) responding empathically is a communication skill shown to be related to positive client outcomes in psychotherapy (Barrett-Lennard, 1981; Parloff, Waskow, & Wolfe, 1978), (c) empathy is seen as an important relationship variable across various theoretical approaches (Orlinsky & Howard, 1978), and (d) considerable interest has been shown in empathic responding in the training of counsellors as evidenced by the large number of training studies in this area (Lambert, DeJulio, & Stein, 1978).

A distinction is made here between the communication skill of "responding empathically" and Roger's (1957) concept of "accurate empathy". The training programs used in the present study did not purport to change the trainees into empathic individuals, but they were intended to teach specific verbal behaviors which would contribute to the communication of empathy in a relationship. The same skill, taught in a study by Richardson and Stone (1981), was named "reflection of feeling". However, in this study, "responding empathically" was felt to be a more accurate description of the skill taught. The present study utilized three measures to assess the training programs: a rating measure, a conceptual measure, and a measure of generalization. The generalization or interview measure utilized the same rating scales as the performance measure, and thus is not discussed under a separate heading.

The Performance Measure

The term "performance" is used in this study to denote the behavioral and verbal aspects in the execution of the skill being taught. A number of approaches have been developed for assessing the communication skill of responding empathically. A large number of these have involved rating scales used by judges to rate specific counsellor behaviors (Carkhuff, 1969a,b; Raskin, 1965; Truax & Carkhuff, 1967). Most of these rating scales have been shown to be moderately reliable (Luborsky & Spence, 1978). Other approaches to assessing empathy have involved: (a) client ratings of therapists' performances, (b) the frequency of use of empathy statements, (c) multiple choice type exams with video stimulus tapes, and (d) written skills tests (Ford, 1979). In the present study, judges' ratings of the trainees' responses to helpee statements were chosen as being the most appropriate type of alternative. Of the other possibilities, client ratings are not possible in a training study, frequency data does not measure quality of response, and exams and written skill tests are not as valid a measure of performance.

In the literature, a number of questions have been raised regarding the validity of judges' ratings in assessing empathy (Blaas & Heck, 1975; Chinsky & Rappaport, 1970; Kurtz & Grummon, 1972). The main contention however, pertains to the clarity of the construct of empathy rather than to the use of ratings. In response to this literature, Kasdorf and Gustafson (1978) suggested that when using rating scales, efforts should be made to: (a) operationalize the definition of the construct being taught in terms of specific behavioral criteria, and (b) operationally define the scale points in terms of identifiable behaviors so as to increase the reliability and validity of the measures. In the present study, responding empathically was operationally defined in behavioral terms as reflecting the feeling and content of the client's statement. In the present study the Carkhuff Empathic Understanding in Interpersonal Processes Scale (1969a,b) was used. The five points on the scale were defined in terms of specific behavioral criteria (see Appendix I).

In their review of the construct validities of empathy measures, Feldstein and Gladstein (1980) concluded that the Empathic Understanding Scale had good validity when empathy was defined strictly as a verbal skill. None of the other empathy measures reviewed were considered to be more valid than this scale. Since the skill taught in the present study was "strictly verbal", the Empathic Understanding Scale was considered to be a valid instrument to use for the performance and interview measures.

The Conceptual Measure

To date, only a few studies have used a conceptual measure of counselling skills. Eskedal (1975) constructed a true-false instrument to measure the acquisition of the information modelled in his training program. The test items were developed by viewing the program and formulating test questions that directly related to the counselling behaviors of the model. The judgment of content validity of the measure was accomplished by submitting the instrument for critical review by six psychologists and modifying it accordingly.

A standardized test was developed by Gunn, Hill and Gelfand (cited in Pfeiffer, Heslin, & Jones, 1976) to measure "empathy recognition". They suggested that high scorers on their test, called Recognition Assessment-Empathy (RA-E), cognitively understood the concept of empathy. The RA-E is a multiple choice type test with twenty questions. Each question consists of one helpee statement and four possible helper responses. The testee is required to choose the most empathic response.

Because the RA-E did not completely suit the requirements of the present study a similar instrument was developed. This instrument, called the Conceptual Measure, followed the design of the RA-E but included additional factors. These were developed from the following concept learning model.

Klausmeier (1971) formulated a descriptive model of conceptual learning. This developmental model proposes four progressively more complex levels of concept attainment: the concrete level, the identity level, the classificatory level, and the formal level. The two levels of interest in the present study were the classificatory level and the formal level. At the classificatory level, individuals are able to determine that two different instances of the same concept are equivalent, and classify a number of instances as examples and others as non-examples. At the formal level, individuals can define attributes of the concept as well as perform the operations of the classificatory level.

Based on the Klausmeier model, the present study defined conceptual understanding as: (a) the ability to identify and classify helper responses on the basis of their empathic facilitativeness, and (b) the ability to rank order helper responses in terms of their empathic facilitativeness. It was not considered appropriate to incorporate the formal level operation of "defining attributes of the concept" into the test because of the short duration of the training program and the abstract nature of the concept.

The test developed for the present study was a multiple choice type in which the answers were ranked by the trainees in terms of their appropriateness. This test, like the RA-E, measured recognition and identification. In addition, it involved classification and qualitative differentiation of responses in terms of their facilitativeness. This test is described in greater detail in Chapter III along with the procedure for the study.

D. Hypotheses

Based on the review of the literature and the pilot study by the author the following hypotheses seemed to be warranted and in need of testing:

1. The positive only and contrast modelling groups will be superior to the negative only modelling and the control groups on all measures.
2. The contrast modelling group will be superior to the positive only modelling group on measures of conceptual understanding, on generalization of the skill to new situations, and on maintenance of the skill over time.
3. The negative only modelling group will be superior to the control group on the performance and conceptual measures.

In order to test the above hypotheses the following general and specific null hypotheses were examined statistically.

General Null Hypotheses

1. There will be no significant difference between groups on a measure of performance.
2. There will be no significant difference between groups on a measure of generalization.
3. There will be no significant difference between groups on a measure of conceptual understanding.
4. There will be no significant difference between scores on the initial posttest and scores on the delayed

posttest for the measure of performance.

5. There will be no significant difference between scores on the initial posttest and scores on the delayed posttest for the measure of generalization.
6. There will be no significant difference between scores on the initial posttest and scores on the delayed posttest for the measure of conceptual understanding.

Specific Null Hypotheses

The specific null hypotheses were determined in advance of the data collection in order to test the theory presented in Chapter II.

7. The scores of the CM group will not be significantly higher than the scores of the POM group on the initial interview measure.
8. The scores of the CM group will not be significantly higher than the scores of the POM group on the delayed interview measure.
9. The scores of the CM group will not be significantly higher than the scores of the POM group on the initial conceptual measure.
10. The scores of the CM group will not be significantly higher than the scores of the POM group on the delayed conceptual measure.
11. The scores of the NOM group will not be significantly higher than the scores of the Control group on the initial performance measure.

12. The scores of the NOM group will not be significantly higher than the scores of the Control group on the delayed performance measure.
13. The scores of the NOM group will not be significantly higher than the scores of the Control group on the initial interview measure.
14. The scores of the NOM group will not be significantly higher than the scores of the Control group on the delayed interview measure.
15. The scores of the NOM group will not be significantly higher than the scores of the Control group on the initial conceptual measure.
16. The scores of the NOM group will not be significantly higher than the scores of the Control group on the delayed conceptual measure.

III. METHOD

The purpose of the study was to investigate the effects of different modelling presentation methods on behavioral and conceptual learning of a communication skill and subsequently, the generalization and maintenance of results. This chapter describes the experimental design, the development of the training tapes, the procedure, and the dependent measures used.

A. Subjects

Undergraduate students enrolled in introductory education courses were asked to volunteer their participation in this study. A limited description of the study was given along with an explanation of the requirements. A sign-up book was then passed around the classroom and volunteers signed up at times that were convenient to themselves. Eighty-seven subjects participated in the study and eighty-four complete sets of data were obtained. Two incomplete sets of data were due to the subjects not returning for the delayed posttest and one to equipment malfunction.

B. Experimental Design and Treatment Conditions

A post-test only, control group design (Campbell & Stanley, 1963) with repeated measures was used. The independent variable in the study was the modelling presentation method. The dependent variables were: skill performance ability, conceptual understanding, and performance in new situations, each assessed on two occasions. The three outcome measures were evaluated immediately after the treatment and again after a period of seven days.

The four experimental conditions included three treatment conditions and one control group. These were called: positive only modelling (POM), contrast modelling(CM), negative only modelling (NOM), and control. The following section describes the nature and development of the training tapes.

C. The Training Program

The communication skill chosen to be taught to the trainees was "responding empathically". The purpose of the program was to teach teacher trainees how to respond empathically when interacting with students. For the purposes of this study, "responding empathically" was operationally defined as, "reflecting the feeling and content of the student's statement". This definition is consistent with that employed in previous empathy training studies (Calder, 1980; Perry, 1975).

The format of the training programs followed a variation of the microcounselling paradigm (Ivey, 1971). Specifically, it was based on a training model developed by Calder (1980), which incorporated the various components of microcounselling with an emphasis on the modelling component and on practice with modelled feedback.

The program was presented on audio-tape. This mode of presentation is interactive in that the trainee is asked to respond to helpee statements on the tape, practice the skill, and then receive feedback regarding the quality of his or her responses. Some advantages of a taped mode of presentation are: (a) the quality of demonstration is consistently high and is standard for each presentation time, (b) the trainee can practice and repractice the skill as many times as required, thereby reviewing and improving on his/her own taped responses, and (c) the program is self-instructional and so does not necessarily require the presence of an instructor. Programs based on this model have been demonstrated to be effective in a number of studies (Calder, 1980; Eustace, 1980; Honeychurch, 1980). In the present study the demonstration of the effectiveness of this type of program was secondary to the question of the effects of different modelling presentation methods.

The three treatment programs developed were identical in all respects except for the manner in which the modelled message was presented. The programs were approximately 20 minutes in duration during which time the trainee listened to the demonstration and recorded his or her responses. In listening to the program, the trainee was exposed to a number of vignettes in which two educational psychologists demonstrated various responses during an interview with a high school student. The specific format of each of the treatment tapes is given in the following section.

Positive Model Tape

The positive model tape had the following components:

1. an introductory section with a brief description of the skill and an explanation of the procedure. These were given in an encouraging manner to promote maximum participation and were intended to cue the listener to the relevant information;
2. sixteen helper-helpee interactions in which the helper demonstrated empathic responses which were rated by the judges and found to be at an average level of 3.9 on the Carkhuff Empathic Understanding Scale.
3. a commentary by the helper on the quality of the responses (attentional cueing);
4. a practice feedback session in which eight helpee statements were heard. The trainees were given a 15 second pause after each statement during which time they were to respond with an appropriate empathic response to the statement. The 15 second pause was followed by an appropriate high level modelled response, giving the trainee the opportunity to compare his or her response with the high level response;

5. a post-test assessing performance ability; this consisted of six student statements to which empathic responses were to be made.

Contrast Model Tape

The contrast modelling tape was identical to the positive modelling tape with the exception of components one and two. The introductory section differed only in its explanation of section two. It was explained that both good and poor examples were to be demonstrated. In section two, the models demonstrated a low level, inappropriate empathic response and then corrected themselves with a high level response. Twelve of these helper-helpee interactions were demonstrated. In section four, both good and poor responses were demonstrated. A transcript of this program is given in Appendix II. The script of the positive model tape was similar to the one given in Appendix II but did not have the negative examples.

Negative Model Tape

The first, second, and fourth components of this tape differed from those in the positive model tape. In the instructions the skill was defined and it was explained that only poor examples were to be heard. Trainees were encouraged to think of better responses. The second component had sixteen helper-helpee interactions in which the helper demonstrated poor, low level empathic responses. These responses were rated by the judges and were found to have a mean level of 1.4. In the fourth segment eight helpee statements were heard followed by poor low level responses. The trainees were asked to make their own responses to each statement which improved on the modelled response.

Control Tape

This tape contained instructions, a description of the skill, and the post-test.

D. Tape Production Considerations

A number of factors were considered during tape production in an effort to enhance the instructional quality and to increase experimental control. One factor was the medium of presentation. The three presentation modes typically used in training studies are: written, audio taped, or filmed. In a study specifically investigating the media of presentation, Robinson, Froehle, and Kurpius (1979b) found no significant difference between video and audio modes of presentation when teaching counselling skills. Similar results were obtained in a study by Wilmarth, Moracco, and Valine (1982). In a 20 hour Human Relations Training class no differences were found between filmed, audio taped, and written modes of presentation on measures of empathic understanding.

Calder (1980), has suggested that visual input may actually detract from the learning of a verbal skill because trainees may attend to the wrong cues. Although the audio visual medium does have a number of advantages over the audio medium it was felt that in practice more training situations use audio tape than video equipment. In the present study, audio taped instructional programs were used.

During tape development, emphasis was placed on enhancing the trainees' responsiveness to the expert models on the tape. Bandura (1977) outlined a number of characteristics of models that enhance responsiveness. The following model characteristics have been found to be efficacious: high status, perceived competence, power, and same sex as the trainee. Having multiple models has also been found to enhance responsiveness. The treatment tape in the present study employed prestigious and competent models (expert educators trained in communication skills), and used models of both sex.

In segment two of the treatment tapes the modelling presentation method differed for each tape: the positive model tape and the negative model tape had 16 demonstration statements while the contrast model tape had 12. This difference was necessary because the contrast model demonstrations required more time to present. For the second segment, a decision was made to keep the instruction time, rather than the number of demonstrations, constant across treatments so that any differences found across treatment groups could not be attributed to differences in instructional time.

The production of the programs and the post-tests required a number of student client statements in the second, fourth and fifth segments. To insure that the difficulty level of the statements was consistent for the programs and the post-tests, a pool of statements was generated and then randomly assigned to the programs and both post-tests.

The content of the statements expressed by the student clients on the tape focused on common, everyday problems typical of those experienced by school students. They were kept brief, and were carefully worded to insure clarity of meaning.

Finally, the program was administered on a trial basis to a number of trainees to insure that the timing was appropriate and the instructions clear.

E. Procedure

The trainees received the treatment programs on Sony Language Lab recorders. On these machines it was possible to listen and record at the same time.

The facilities available allowed a maximum of three students to be trained at one time. On arrival, the trainees were randomly assigned to a treatment condition and seated in individual small training rooms. A description of the equipment and the program along with the procedural instructions was then given and the the trainees proceded to work through their programs individually.

Upon finishing the audio taped portion of the program the trainees were asked to participate in a simulated interview for five minutes and, following this, complete the written test. The trainees were then asked to return the following week at the same time to complete the study. After the delayed posttest, administered seven days after the treatment, the subjects were debriefed (see Appendix III) and their reactions to the program elicited informally.

F. Dependent Measures

The three dependent variables in this study were: a measure of skill performance, a measure of conceptual understanding, and a measure of skill performance in a simulated interview.

Performance Measure

This measure assessed the trainees' abilities to respond empathically to student client statements. Six statements were presented to the trainees as the final component of the training program. They were asked to make an empathic response to each of the six statements. Three trained judges independently rated the responses. The Carkhuff "Empathic Understanding for Interpersonal Processes Scale" (1969a,b) was used to rate the responses. To improve the reliability of the judges, each scale point was defined in behavioral terms and a behavioral definition of empathic responding was developed (see Appendix I).

Two of the judges were blind to the conditions and to the identity of the subjects. The third judge operated the equipment and therefore was not blind to the conditions. Inclusion of the third judge's ratings as part of the dependent measure was conditional on a number of criteria. These are discussed in Chapter IV. The ratings of the six responses for each subject were averaged to give a single performance score for each subject.

Two professional psychotherapists served as raters. Both were experienced raters and one had had previous experience with the Carkhuff scales. In the one hour rater training session examples of responses at different levels were provided along with an operational description of empathic responding and an explanation of the rating procedure. Following this, trial ratings of sample responses were made until an 80% level of agreement was reached consistently by the judges.

Conceptual Measure

In the present study, conceptual understanding was operationally defined as the ability to identify and classify helper responses on the basis of their empathic facilitativeness (cf. Chapter II).

For the conceptual measure, the subjects were presented with six helpee statements, each of these being followed by four possible helper responses. Two alternate forms of this test were constructed for the two testing occasions. In developing the test 15 student statements were selected. For each of these, six possible responses representing various levels of empathic responding were generated. Each of the responses was rated by five judges on the Carkhuff Empathic Understanding Scale. From the six responses the four responses which provided the widest range of empathic understanding were selected. Three of the 15 questions were eliminated because agreement on the ratings was not reached by the five judges. The remaining 12 questions were randomly assigned to the two alternate forms of the test.

In taking the test the subjects were asked to rank order the responses from best to worst in terms of their empathic facilitativeness (see Appendix IV). This measure was presented simultaneously on audio tape and in the written mode so that differences in trainee responding between these two modes would not bias the results.

Five counselling psychologists with previous empathy rating training were given the test and the modal value of their combined responses was taken as an "actual" rank ordering. The data on this measure consisted of difference scores between the subjects' rank orderings and the "actual" rank order. Difference scores from the six items were averaged to give a single conceptual score for each subject. In each case this score was subtracted from the total number of errors possible (48) so that scores would correlate positively with the level of conceptual understanding.

Interview Measure

In order to assess the subjects' abilities to perform the communication skill in a realistic setting, each subject was asked to practice their empathic responding skills in a simulated interview setting. Three university students role played as the student clients. They were coached, in a one hour training session, to present concerns that might typically be discussed with a school teacher. Four general topic areas were chosen for the interviews. These were: "family concerns", "vocational concerns", "relationship concerns", and "personal concerns". Trainees were given a different topic on the delayed posttest from the one presented on the initial posttest but apart from this the topics were randomly assigned to trainees.

The interviews were taped and lasted approximately five to ten minutes. From each interview the middle three minute segments were extracted. The subjects' responses from these segments were rated using the same rating scale and methods as those used in the performance measures. An overall score was calculated for each subject.

For the conceptual measure two forms of the test (forms A and B) were required, one for the immediate post-test and one for the delayed post-test (Appendix IV). In order to eliminate any variance due to differences between forms A and B, one half of the subjects received form A on the immediate post-test and one half received form B. On the delayed post-test, each subject received the alternate form.

The type of analysis used is presented in Chapter IV along with the results and discussion.

IV. RESULTS AND DISCUSSION

The data collected during the present experiment consisted of three dependent measures taken from each subject on two occasions. The dependent variables consisted of a measure of skill performance, a measure of the trainees' understanding of the concept of empathy, and a measure of generalization of the skill. The major statistical analysis used was a one-way univariate analysis of variance with repeated measures calculated for each of the dependent measures. It was decided to accept as significant any differences for which the probability for rejecting the null hypotheses was less than .05.

Two of the dependent measures involved ratings made by judges. Inter-rater reliability coefficients were calculated for each judge using a Pearson r. In this chapter the results of the analysis are presented and discussed in conjunction with the hypotheses stated in Chapter II.

A. Reliability of the Judges

Three judges rated randomly presented responses made by the trainees for the performance measure and the interview measure. Two of the judges were blind to the experimental conditions, to the testing occasion (initial or delayed), and to the ratings of the other judges. The third judge, the present author, was not blind to the experimental conditions or the testing occasions but was blind to the ratings of the other judges. The advantage of using the ratings of three judges versus those of two judges was that the overall reliability of the measures would be increased. Because the third judge was not blind to the conditions in this study, the possibility of rater bias may have existed. Therefore two criteria were used to determine whether the advantages of including the third judge's ratings in the dependent measures would outweigh the disadvantages. The first criterion required a high correlation of the third judge's ratings with those of the other two. The second required that the third judge's ratings did not consistently fall outside the mean range set by the ratings of the other two judges.

The correlation of ratings for the individual judges for the four experimental conditions reported in Table I show correlations between 0.7 and 0.9 with the highest correlations being between the third judge and the other two. The mean ratings for the four experimental conditions and the two testing occasions (see Table II) show that, for the most part, the third judge's mean ratings fell between the range set by the means of the other two judges. Thus, there seemed to be no observable bias. On the bases of these results it was decided to include the third judge's ratings as part of the dependent measures, in order to increase the reliability of the measures.

Table 1

Correlations of the Ratings of Individual Judges for Each Condition

CONDITION	JUDGES 1 with 2 (n = 21)	 1 with 3 (n = 21)	 2 with 3 (n = 21)
Group 1: Positive			
Performance measure	.811	.843	.869
Interview measure	.765	.902	.770
Group 2: Contrast			
Performance measure	.864	.939	.863
Interview measure	.857	.866	.854
Group 3: Negative			
Performance measure	.886	.929	.899
Interview measure	.736	.855	.752
Group 4: Control			
Performance measure	.767	.847	.774
Interview measure	.689	.721	.691

Table 2

Group Means and Standard Deviations for Individual Judges on the Performance and Interview Measures

Group	Initial test			Delayed test		
	Judge 1	Judge 2	Judge 3	Judge 1	Judge 2	Judge 3
			PERFORMANCE MEASURE			
1. Positive (n = 21)	19.95 (2.85)*	18.95 (2.99)	19.90 (3.19)	19.00 (2.79)	18.42 (2.85)	18.29 (2.61)
2. Contrast (n = 21)	18.10 (3.99)	19.71 (3.70)	18.86 (4.10)	19.43 (3.65)	19.71 (2.74)	19.57 (3.23)
3. Negative (n = 21)	9.38 (3.91)	9.52 (4.15)	9.61 (3.88)	11.81 (3.34)	10.67 (3.62)	11.76 (3.53)
4. Control (n = 21)	7.00 (1.00)	7.95 (2.03)	7.19 (1.12)	9.28 (2.30)	9.57 (2.97)	9.05 (2.34)
			INTERVIEW MEASURE			
1. Positive (n = 21)	2.76 (0.94)	3.00 (0.83)	2.85 (0.96)	2.80 (0.93)	2.76 (0.99)	2.86 (0.91)
2. Contrast (n = 21)	3.38 (0.97)	3.28 (0.90)	3.47 (0.98)	3.14 (1.06)	3.09 (1.04)	3.09 (0.94)
3. Negative (n = 21)	1.38 (0.67)	1.44 (0.59)	1.33 (0.57)	1.57 (0.97)	1.81 (0.98)	1.57 (0.87)
4. Control (n = 21)	1.23 (0.43)	1.33 (0.48)	1.23 (0.43)	1.47 (0.60)	1.33 (0.48)	1.23 (0.43)

* () indicates standard deviations

The performance measures were obtained by having the three judges rate each of the subject's six responses on both the initial and the delayed posttests. The three judges' ratings were averaged to give a score for the response. The six response scores were then averaged to give an overall performance score. The interview measures were obtained by having the three judges listen to the three minute mid-sections of each of the interviews and rate each statement made by the trainees. An overall rating was then made from these ratings and used as the interview score. In the rating sessions the trainee interviews and the performance responses were randomly presented to the judges.

The results shown in Table III indicate an average inter-rater reliability of 0.93 for the initial posttest and an r of 0.92 for the delayed posttest. These results compare favorably with inter-rater reliability coefficients reported in studies using similar rating scales, (DiMittia & Arndt 1974; Haase & DiMittia 1970, Ivey, et. al., 1968; Kuna, 1975) and are considered to indicate good rater reliability for the measures used in the following analysis.

B. Treatment Effects

The design of the present study involved one independent variable (the modelling presentation method) and three dependent variables assessed on two occasions. The means and standard deviations for the four groups on the two testing occasions are given in Table IV. The following

Table 3

Mean Inter-rater Reliability Coefficients

Measure	Initial Test (n = 84)	Delayed Test (n = 84)
Performance	.965	.955
Interview	.908	.887

Table 4

Group Means and Standard Deviations

Group	Measure		
	Performance	Interview	Conceptual
		INITIAL POSTTEST	
1. Positive (n = 21)	19.60 (2.91)	2.87 (0.87)	38.00 (5.33)
2. Contrast (n = 21)	18.89 (3.73)	3.38 (0.89)	42.00 (3.63)
3. Negative (n = 21)	9.51 (3.91)	1.38 (0.55)	33.43 (7.05)
4. Control (n = 21)	7.38 (1.22)	1.27 (0.34)	24.76 (6.37)
		DELAYED POSTTEST	
1. Positive (n = 21)	18.57 (2.54)	2.81 (0.87)	38.86 (2.50)
2. Contrast (n = 21)	19.57 (3.13)	3.11 (0.98)	40.76 (3.19)
3. Negative (n = 21)	11.41 (3.34)	1.65 (0.89)	33.91 (7.31)
4. Control (n = 21)	9.32 (2.48)	1.35 (0.43)	25.81 (8.83)

sections examine the results for the three measures.

Performance Measure

The performance measures used in this study evaluated the effective skill level of the subjects in their ability to respond empathically to six helpee statements on audiotape. The range of possible scores was from six to 30. Means and standard deviations for this measure are reported in Table IV. An analysis of variance with repeated measures was performed on this data to investigate Group and Test Occasion differences. The results, reported in Table V, showed that both Group and Testing Occasion had statistically significant effects. These results were relevant to Null Hypothesis 1, predicting no difference between groups on the initial and delayed posttests, and Null Hypothesis 4, predicting no difference between testing occasions (see Chapter II). On the basis of the analysis both of these hypotheses were rejected indicating that there were differences between groups and testing occasions. A priori and posteriori contrasts were calculated for cell means to investigate which pairs of treatments differed significantly.

A Priori Contrasts.

In order to test the specific Null Hypotheses numbers 11 and 12, planned contrasts using a one-tailed t-tests were calculated. The results reported in Table V show that the negative only modelling (NOM) group scored significantly higher than the Control group on this measure on both the

Table 5

Summary of Analysis of Variance with Repeated Measures, t Contrasts, and Scheffé Contrasts for the Performance Measure

Source	ss	df	ms	F ratio
Group main effects (A)	4089.90	3	1363.30	99.46*
Within	1096.60	80	13.71	
Testing Occasion main effects (B)	32.01	1	32.01	7.12*
A x B	61.53	3	20.51	4.56*
Within	359.83	80	4.50	

A Priori t Comparisons

Group Contrast	s error	t value	p (one-tailed)
Negative with Control:			
Initial Test	0.89	2.38	0.013
Delayed Test	0.91	2.31	0.014

Table 5 (Continued)

Scheffé Multiple Comparisons between Means[1]

	Groups			
	Positive	Contrast	Negative	Control
Initial Test	19.60	18.89	9.51	7.38
Delayed Test	18.57	19.57	11.41	9.32

* denotes significant effects ($p<.05$)

[1] means underscored by a common line are not significantly different, $p<.05$

initial and the delayed testing occasions. Therefore Null Hypotheses 11 and 12 were rejected. These results would suggest that when trainees receive only bad examples of responding empathically they are able to perform the skill better than subjects receiving only a definition of the skill.

Posteriori Contrasts.

A Scheffe Multiple Comparison Test calculated to identify where significant differences lay between cells revealed the following: (a) there were no significant differences between the positive only modelling (POM) and the contrast modelling (CM) groups on either the initial or the delayed posttest measures of performance, (b) all other groups were significantly different from each other on both the initial and delayed posttest measures of performance, (c) the POM and CM groups showed no significant increase or decrease in performance on the two testing occasions, (d) the NOM and Control groups showed a significant increase in performance on the delayed posttest.

Interview Measure

The measure of generalization was obtained by rating the trainees' empathic skill level while they participated in a simulated interview. The range of possible scores was from one to five. The results of the analysis of variance with repeated measures showed a statistically significant effect across groups but nonsignificant effects across testing occasions (see Table VI).

Table 6

Summary of Analysis of Variance with Repeated Measures, t Contrasts, and Scheffé Contrasts for the Interview Measure

Source	ss	df	ms	F ratio
Group main effects (A)	116.05	3	38.68	42.51*
Within	72.81	80	0.91	
Testing Occasion main effects (B)	0.001	1	0.001	0.002
A x B	1.64	3	0.546	2.09
Within	20.86	80	0.26	

A Priori t Comparisons

Group Contrast	s error	t value	p (one-tailed)
Positive with Contrast:			
Initial Test	0.2729	1.86	0.035
Delayed Test	0.2854	1.06	0.143
Negative with Control:			
Initial Test	0.1416	0.78	0.219
Delayed Test	0.2169	1.39	0.089

Table 6 (Continued)

Scheffé Multiple Comparisons between Means[1]

	Groups			
	Positive	Contrast	Negative	Control
Initial Test	2.87	3.38	1.38	1.27
Delayed Test	2.81	3.11	1.65	1.35

* denotes significant effects ($p < .05$)

[1] means underscored by a common line are not significantly different, $p < .05$

Null Hypothesis 2, predicting no significant differences between groups, was rejected while Null Hypothesis 5, predicting no significant differences between testing occasions, failed to be rejected. It would appear that, on this measure, skill level of responding empathically was maintained over a period of seven days. In order to determine where significant differences occured across groups a priori and posteriori contrasts were calculated.

A Priori Contrasts.

The specific Null Hypotheses 7 and 8 predicted that the CM group would not score significantly higher than the POM group on either the initial or the delayed interview measures. Planned contrasts using one-tailed t-tests indicated that on the initial posttest the CM group did score significantly higher than the POM group but this significant difference was not maintained on the delayed posttest. Specific Null Hypotheses 13 and 14 predicted that the NOM group would not score significantly higher than the control group on either posttest. The results of the contrasts reported in Table VI failed to reject these two hypotheses. This indicated that trainees who received only bad examples of the skill were not able to respond more empathically in a simulated interview than trainees receiving no modelled examples. On the basis of the results reported in Table VI, Null Hypothesis 7 was rejected while Null Hypotheses 8, 13, and 14 failed to be rejected.

Posteriori Contrasts.

Results of the Scheffe Multiple Comparison Test indicated that both the POM and the CM groups scored significantly higher in a simulated interview than the NOM group and the Control group on the initial posttest. These differences were also maintained on the delayed posttest.

Conceptual Measure

The conceptual test in this study required trainees to identify and discriminate between different quality levels of empathic responses. The test yielded an error score. All scores were then transformed by subtracting them from 48, the total number of errors possible. This transformation was made so that higher scores would correspond positively with greater conceptual understanding.

As seen in Table VII, analysis of this data indicated a statistically significant effect across groups but not across testing occasions. Null Hypothesis 3, suggesting no significant differences between groups, was rejected and Null Hypothesis 6, predicting no significant differences between testing occasions, was not rejected. As with the generalization measure, the conceptual measure indicated that trainees were able to retain what they learned from the program over a period of 7 days with no further training after the initial program.

A Priori Contrasts.

Planned t-tests were calculated between group means to test Null Hypotheses 9, 10, 15, and 16. The results reported

Table 7

Summary of Analysis of Variance with Repeated Measures, t Contrasts, and Scheffé Contrasts for the Conceptual Measure

Source	ss	df	ms	F ratio
Group main effects (A)	6225.84	3	2075.28	39.81*
Within	4170.25	80	52.12	
Testing Occasion main effects (B)	3.44	1	3.44	0.19
A x B	34.29	3	11.43	0.64
Within	1422.25	80	17.78	

A Priori t Comparisons

Group Contrast	s error	t value	p (one-tailed)
Positive with Contrast:			
Initial Test	1.407	2.84	0.004
Delayed Test	0.8842	2.154	0.019
Negative with Control:			
Initial Test	2.073	4.18	0.000
Delayed Test	2.501	3.24	0.001

Table 7 (Continued)

Scheffé Multiple Comparisons between Means[1]

	Groups			
	Positive	Contrast	Negative	Control
Initial Test	38.00	42.00	33.43	24.76
Delayed Test	38.86	40.76	33.91	25.81

---

* denotes significant effects ($p<.05$)

[1] means underscored by a common line are not significantly different, $p<.05$

in Table VII show that the CM group scored significantly higher than the POM group on both the initial and the delayed testing occasions. Also, on this measure the NOM group scored significantly higher than the Control group. Therefore, on the basis of these contrasts, Null Hypotheses 9, 10, 15, and 16 were rejected.

Posteriori Contrasts.

As reported in Table VII the Scheffe Test for multiple comparisons demonstrated that all groups tested were significantly different from one another on both the initial and delayed posttests. The results of the a priori and posteriori contrasts suggested that the rank order of ability from highest to lowest was: CM group, POM group, NOM group, Control group.

Summary

The findings of the study indicated that the POM and CM groups were significantly superior to the NOM and Control groups on all measures. The CM group was significantly higher than the POM group on both the initial and delayed conceptual measures, and on the initial interview measure. There were no differences between these two groups on the performance measure.

The NOM group was significantly higher than the Control group on both initial and delayed testings of the performance measure and the conceptual measure. No decrease was seen over testing occasions for any of the groups and the NOM and Control group showed an unexpected increase over testing occasions on the performance measure.

C. Discussion

From the literature reviewed in Chapter II an argument was developed for the utilization of contrast modelling rather than positive only modelling as the preferable modelling presentation method. It has been adequately demonstrated in the literature that both modelling presentation methods are effective in teaching skill performance (Ford, 1979). In the present study it was proposed that by providing contrasting examples trainees would gain a better conceptual understanding of the skill being taught. Furthermore, it was argued that a better conceptual understanding would promote retention of the skill over time and generalization of the skill to new situations.

Counter arguments to this theory would suggest that contrast modelling interferes with learning because the trainees learn inappropriate skills. In the following section the results of the study are discussed in terms of the above arguments.

Program Effectiveness

The self-instructional audio tape programs used in this study were designed to be an efficient and effective method for introducing students to, and teaching, communication skills. It should be emphasized that the programs are not a complete workshop in themselves and that they would be most useful when used as one component of a communications workshop or course. Therefore, it is felt that differences found between modelling presentation methods in this study would be exaggerated if the same methods were applied to longer and more intensive training programs.

In the training of communication skills, Carkhuff and Berenson (1967) have suggested that a "level three" on the Scale for Measurement of Accurate Empathy should be a basic goal or criterion for trainees. Inspection of the group means for the performance and interview measures in the present study (Table IV) show that the POM group and the CM group generally scored within the three level range, while the NOM group and the Control group scored at approximately the 1.5 level range. These results clearly indicate that the programs with positive only and contrast examples were effective in teaching trainees to respond empathically to the level suggested by Carkhuff and Berenson in a fairly short period of time.

On the performance measures, differences between groups occured as predicted. The POM treatment and the CM treatment were equivalent in their ability to teach performance of the skill while the NOM treatment was more effective than no treatment but not as effective as the former two. These results were found both on the immediate posttest and seven days after treatment. It is significant that trainees who only received examples of how not to respond were able to respond more empathically than untrained subjects. These results would contradict suggestions that negative examples interfere with learning (Alssid and Hutchison, 1977).

Results of the conceptual measure for both the initial and delayed tests suggested that contrast modelling does indeed teach an understanding of "responding empathically" more effectively than positive only modelling. This implies that trainees receiving contrast modelling are better able to identify, classify, and rank order helper responses in terms of their empathic facilitativeness than trainees receiving other methods of modelled presentation.

Trainees who received only poor examples of the communication skill demonstrated a significantly greater conceptual understanding than trainees in the Control group who received only an explanation of the skill. This would suggest that negative only modelling does provide trainees with more information about the skill and thus enhances their learning. However, since the negative only modeling treatment was significantly inferior to the other two treatments on all measures, it would not be realistic to consider this presentation method in designing future training programs. It was felt that the superiority of the contrast modelling treatment was due to the contrast provided by the combination of positive and negative examples and not just due to the addition of the NOM factor.

Besides arguing that contrast modelling interferes with learning Alssid and Hutchison (1977) and Berliner (1969) suggested that positive only modelling was more efficient than contrast modelling in that it takes less time to present only good examples. In the present study instruction time was kept constant across all treatments. In order to accomodate both good and bad responses in the contrast program the number of examples was reduced from 16 to 12. Thus, in these programs, the contrast modelling program was as time efficient as the positive only program and the trainees performed as well as or better on the measures used even though they received fewer examples.

Generalization of Treatment

An indication of how well the skill taught would transfer to new situations was obtained by requiring the trainees to participate in a simulated helping relationship. During the training programs the trainees only heard and responded to single student statements. This was quite different from the simulated interviews which closely approximated actual student-teacher or student-student interactions.

On the generalization measure both the POM and CM groups were significantly better than the Control group on both testing occasions. The group means for these two treatment groups showed that trainees were performing at a high two to three level on the Carkhuff empathy rating scale. This would indicate that the skill taught did generalize well to an interview situation for these two groups. The NOM group was not significantly better than the Control group and the NOM group means showed a low level of performance in these interview situations.

On the basis of the research reviewed in Chapter II the hypothesis was put forth that training approaches that improve cognitive or conceptual understanding would also promote generalization and retention. In the present study results indicated that the CM program did teach conceptual understanding more effectively than the POM program. However, support for the superiority of the CM program in promoting generalization was only found on the immediate posttest. In the delayed posttest these two groups were not significantly different at the .05 level although the CM group was somewhat higher than the POM group (p=.15). These findings would provide only limited support to the idea that trainees who have developed a better conceptual understanding of a skill would be able to apply it more effectively in different situations.

It may be that differences between the two approaches in terms of generalizability may only become apparent after more intensive training and that the 20 minute programs given in the present study were not extensive enough to show significant differences on a delayed measure. Also of interest would be a measure of generalization for these two approaches in an actual work setting. The results of this study do tend to support existing research showing that a focus on cognitive factors enhances generalizability (Berg & Stone, 1980; Derry & Stone, 1979; Eskedal, 1975; Richardson & Stone, 1981). The differences found in this study would probably warrent choosing a contrast modelling approach over a positive only modelling approach when designing a new program.

Maintenance

Maintenance of the skill over time was evaluated by retesting trainees with equivalent tests seven days after they had taken the program. Results on all three measures showed no significant decreases of the skill level for any of the treatment groups. Two unexpected differences occured on the performance measure that question the reliability of this measure, i.e. the NOM and the Control groups showed an improvement in skill level over the seven day interval. A number of possible reasons for this unexpected improvement are discussed.

Since the trainees in the NOM group and the Control group were not given any positive training they may have been confused during the initial posttest. During the ensuing week they had time to think about what was required and this may have improved their performance.

Another possibility was that a number of trainees in the NOM and Control groups may have talked to the trainees in the other two treatment groups and found out what was required. The experimenter, in talking to trainees during the debriefing session, discovered that this had happened in a number of cases. However, the extent of this contamination is unknown. It is significant that these two groups did not improve on the interview measure, a more complex task and therefore one not as readily learned informally from other trainees.

A third possibility is that there may have been a practice effect in taking the tests which resulted in improvements on the second testing time for the NOM and Control groups.

The issue of stability of performance did not seem to exist with the interview and the conceptual measures, thus it was from these that conclusions regarding maintenance could most safely be drawn. It was suggested earlier that the CM program should promote greater maintenance or retention of the skill than the POM program. Because both these groups showed no significant decrease in their ability to perform the skill after a period of seven days no conclusions could be drawn regarding the relative superiority of one over the other in terms of maintenance. It is possible that the high level of maintenance found in this study in comparison to that found in other studies was due to the fact that there was only one skill to remember in this study. It is normal in communications workshops and courses to teach a number of skills and this would likely compound the problem of maintenance.

V. Summary and Conclusions

In this final chapter a brief overview of the study along with implications of the results and suggestions for further research are presented.

A. Overview

The present study was conducted to investigate an unresolved issue in the literature relating to the modelling component of training programs. The issue concerned the preferable way of presenting the modelled message. Two methods of presentation are currently favored, modelling good or appropriate examples of the skill to be learned, and modelling both good and bad examples of the skill to be learned in order to provide a contrast. Results of a pilot study suggested that trainees receiving both good and bad examples develop a better conceptual understanding of the material being taught.

The effectiveness of three modelling presentation methods in teaching performance and understanding of the communication skill of responding empathically were investigated in the present study. These included the two described above and a third method, modelling inappropriate responses only with no good examples. Inappropriate responses were accompanied by statements clearly indicating the poorness of the responses.

The second major objective of the study was to investigate the effectiveness of the three modelling presentation methods in promoting retention of the skill over time and generalization of the skill to new situations. A rationale supporting the hypothesis that contrast modelling would be superior to the other presentation methods in promoting retention and generalization was developed.

First and second year undergraduate education students from an introductory course in educational psychology were asked to volunteer for the study. Eighty-four students completed the programs and the tests. None of them had had any substantial training in communication skills prior to the study.

The programs administered were designed to teach the communication skill of responding empathically, defined in this study as "reflecting the feeling and content of the helpee statement". The programs were of approximately 20 minutes in duration and included instructions, didactic explanation, modelled examples, practice with modelled feedback, and practice only sections.

Three measures were used to evaluate performance of the skill, conceptual understanding of the material, and generalization of the skill to a simulated interview situation. Ratings on The Scale for Measurement of Empathic Understanding in Interpersonal Processes (Carkhuff, 1969) were used as a measure of empathic responding on the performance and generalization measures. The ratings made by the three judges were found to have a high level of inter-rater reliability. On the conceptual understanding measure, trainees were required to rank order different empathic responses in terms of their empathic facilitativeness. These responses were presented in the auditory and written modes simultaneously.

The results of the statistical analyses reported in the previous chapter clearly demonstrated that the positive only and the contrast modelling groups were superior to the control group on all measures indicating that these programs were effective in teaching the skill. Mean ratings for these two groups on the performance and interview measures were in the three level range, a range suggested by Carkhuff and Berenson (1967) as being a basic criterion for trainees.

Comparisons of the groups showed that contrast modelling was significantly more effective than positive only modelling in teaching conceptual understanding. However, both methods taught performance of the skill to approximately the same level. It was also found that the contrast modelling group performed significantly better than the positive only model group on the initial interview measure indicating that this group was better able to transfer the skill learned on the program to new situations. On the delayed interview measure the contrast modelling group was somewhat better than the positive only modelling group but not at the level of $p<.05$. Both of these groups showed no significant decreases in their performance level or conceptual understanding of the skill over a period of seven days and both groups were significantly better than the control group after this period.

The negative only modelling group performed significantly lower than the other two treatment groups on all measures. This group, however, was significantly better than the control group on the performance and the conceptual measures suggesting that a certain amount of learning had occured. Both the negative only modelling group and the Control group showed an unexpected improvement on the performance measure after a period of seven days. There was some indication that these subjects may have improved their performance by talking to trainees in the other two groups during the delay period. Their scores on the generalization and conceptual measures did not show a similar improvement.

B. Conclusions and Implications

The major issue investigated in the study was (a) whether contrast modelling would provide trainees with a better conceptual understanding of the skill being taught and thus promote generalization and retention, or (b) whether it would interfere with learning because trainees would learn inappropriate skills.

The results of the present study indicated that contrast modelling was more effective in teaching conceptual understanding of the skill than positive only modelling.

These results supported arguments made by Ivey and Authier (1978) and Eskedal (1975) that by providing good and bad examples trainees would be better able to discriminate between and identify the appropriate behaviors. It is proposed here that by including positive and negative examples in a modelling sequence, trainees are better able to discriminate between those dimensions of the materials presented which are relevant and critical and those which are not. Thus, their understanding of the material is increased.

A second conclusion drawn from the findings was that trainees with a greater conceptual understanding were better able to perform the skill in new situations. That is, generalization of the skill is enhanced. This conclusion was made with less confidence than the first because a statistically significant difference between the positive only and the contrast group on the interview measure was only found directly after treatment. Seven days after the treatment the contrast group performed at a higher level than the positive only group ($p<.15$) but did not reach specified levels of statistical significance.

These results were in accordance with other studies investigating the role of cognitive factors and attentional processes in the learning of new skills through modelling (Berg & Stone, 1980; Derry & Stone, 1979; Glass, Gottman, & Shmurak, 1976; Richardson & Stone, 1980). These researchers reported that the introduction of cognitive components increased the generalizability of modelled behaviors to multiple situations and increased maintenance over time. Because the contrast modelling group was able to perform better in new situations, it is suggested that trainees with greater conceptual understanding are better able to make novel responses while trainees with less conceptual understanding are more likely to be confined to the limited response set provided by the discrete and specific skills training.

In the present study both the contrast and the positive only modelling groups demonstrated maintenance of the skill over time. Consequently, no conclusions regarding the differential effects of these two methods on retention can be made.

Results of this study do not support the argument that giving negative or poor examples interferes with learning. It was found that trainees who heard only poor examples were higher in their level of empathic responding and in their level of conceptual understanding than untrained subjects. It would seem that these trainees did learn some rules about how not to respond and thus were able to avoid possible errors in responding. Because the negative only modelling approach was inferior to the other two treatment approaches on all measures it is not considered to be a practical teaching method. Some studies have shown that the modelling of poor examples results in low performance if the trainees are lead to believe that the poor examples are actually appropriate examples (Perry, 1975; Pierce, Carkhuff, & Berenson, 1967). It is emphasized here that it is important to clearly identify or cue the negative examples as examples of how _not_ to respond so that trainees are not confused as to their appropriateness.

Overall, findings from the study indicate that there are advantages to using contrast modelling as opposed to positive only modelling in training programs in terms of increased conceptual understanding and generalization of the skill. These results may well have implications for other types of training and teaching methods that utilize modelling as an instructional technique in similar situations.

Limitations

Various limitations to the present study were noted. Firstly, the training programs taught only one skill, that of "responding empathically". It is possible that the effects of the modelling presentation method may vary with different skills and with such variables as the complexity level of the skill being taught. For example, it was felt that one of the reasons that no significant differences were found between contrast and positive only modelling in the Alssid and Hutchinson study (1977) was that the skill taught, asking open ended questions, was of a low complexity level. Contrast modelling may have more impact with higher complexity skills.

Secondly, the training programs used in the study were short, intensive, self-instructional modules intended for use in a more extensive communication workshop or course. Moreover, they were introductory programs designed to be used at the initial stages of training. If the same questions regarding modelling presentation methods were investigated using more extensive and in depth treatment periods, differences between the methods in terms of generalization and maintenance may become more obvious. In this respect the present study was exploratory.

Thirdly, the study did not differentiate between the positive only and the contrast modelling groups on the issue of maintenance of skills. It is possible that differences would become apparent if further delayed testing occasions were used after longer periods of time.

Fourthly, a measure of generalization was obtained by requiring trainees to participate in a simulated interview. The validity of this measure could be increased by assessing performance in multiple situations and in actual work settings.

Finally, the subjects used in the study were undergraduate education students. Therefore demographic variables would have to be investigated before findings in this setting could be applied to other populations.

Suggestions for Further Research

Given the results of this study regarding modelling presentation methods there are a number of implications which bear further investigation. The first concerns the types of skills with which contrast modelling will be effective. The skill of responding empathically was taught in this study. Further research might investigate the effectiveness of contrast modelling in other areas which utilize modelling as an instructional technique. These include: teacher training, parent training, assertiveness training, cognitive behavior modification, athletics training, and others. Another skill variable, discussed in the limitations section, that warrents investigation is skill complexity.

A second area of possible investigation pertains to the intensity and extensiveness of the program. The results of the present study were obtained from a relatively short treatment intervention. Evaluation of the effectiveness of contrast and positive only modelling is needed in longer term treatment programs such as workshops or courses. In those situations the effectiveness of different modelling presentation methods could be investigated at later stages of training.

It is also suggested that the present study and results are in need of replication with other populations, with measures that assess generalization in actual work settings, and with delayed posttests at longer periods than seven days.

Modelling procedures play a vital role in many training programs. Contrast modelling would appear to be one method by which the learning that occurs from this teaching procedure can be increased.

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Appendix I

Rating Scale Information

The following scoring guide is to be used in conjunction with the Carkhuff (1969a,b) Empathic Understanding in Interpersonal Processes: A Scale for Measurement.

LEVEL	TYPES OF RESPONSES
1.	Responses at this level do not reflect feelings. Content may only vaguely be reflected. Feeling may be misinterpreted. The response may be irrelevant. The helper may focus the conversation on him/herself.
2.	Responses may give a poor reflection of feeling. Feeling may be neglected and only content reflected. The true feeling may be reflected vaguely, distorted, or misinterpreted. The helper may give advice.
3.	Responses reflect general feeling and content. Responses are at approximately the same level as the student statement neither adding nor subtracting from it. The response is not sensitive to finer distinctions. There may be a "direction" implied in the response.
4.	Responses reflect the true feeling and content not verbalized by the student. The response is sensitive to finer distinctions. The response does not turn the conversation in a

particular direction.

5. The response captures the total feeling spoken and implied.

   The response clarifies the true feeling.

   The response demonstrates that the helper is with the student and feels what they feel.

   The response leads them into a deeper exploration of the problem.

Appendix II

Transcript of the Contrast Program

The program you are about to hear uses a unique approach to teach communication skills. It is unique in that you will be able to practice the skills yourself while listening to the program. In doing this you will be a participant not just a listener.

You will be learning a particular skill used by professional interviewers, psychologists, school counsellors, and other individuals in the helping professions who deal with people. This is a particularly useful skill for teachers to have when students come to them for help. This skill is one of a number of skills that can help you in communicating with others.

The purpose of this program is to teach you how to respond to a person in such a way that you reflect the content and feelings of their statement to you. By responding in this way, you will demonstrate to the person that you have accurately heard them and that you understand their feelings. This communication skill is called empathy. When used appropriately this skill can help you relate better to students and even help maintain discipline in the classroom.

The program that follows takes about 20 minutes. Listen carefully and follow along with the exercise. You are about to hear a student and teacher talking. Statements have been taken out of the context of the conversation to demonstrate empathic responding. The teacher will respond to the student's statement with two responses. His first response is a bad example of an empathic response; he then corrects himself and makes a good empathic response. Notice how the bad example disregards the feeling and the content of the student's statement whereas the good example accurately reflects the feeling and content of the statement. Later you will be asked to make similar types of responses. Remember, the teacher will give both a bad and a good example of the empathic responses.

Statements

1. It seems like people have been ignoring me lately.

2. I don't know why it is but I haven't been able to get down to work lately.

3. Classes are so boring.

4. I tried really hard on this assignment and I still failed.

5. I just don't want to talk about sex.

6. I get so worked up at exam time that I blow the test completely.

7. Its not fair, why do I always have to stay in at noon.

8. How can a person pick a career these days when jobs are changing so fast and there are so many to choose from.

Comment

In the good examples of empathic responding the teacher attempted to stay with the student, capturing the content and feeling of the student's statements. Note how this empathic understanding leads the student into a deeper exploration of her problem. It demonstrates a recognition of her feelings and problems.

Notice how in the worst of the bad examples the teacher disregards or ignores the student's problem focusing only on his own needs. These responses have the effect of: belittling the student's problem, changing the subject, or forcing the teacher's own opinions on the student. In other bad examples the teacher only reflects the content of the statement, or worse, tries to make the student feel better by giving advice. Giving advice is not always the best way to help someone. Examples like these are often found in everyday speech. Here are a few more examples of bad and good responses.

9. Do you think I will ever get out of this mess?

10. I think most people don't really like me, they just tolerate having me around.

11. I really like Mr. Brown, he was the best instructor I've had.

12. I don't know about my courses this semester; I've missed so many classes, it's too late to catch up.

13. I wish these exams were over already!

14. How come we're always treated like children?

15. I often get an uncontrollable urge to steal.

16. I spent hours on this assignment and it's still a piece of junk.

Comment

Now that you know the difference between good responses and poor responses we will focus on practicing good empathic responses. You will hear a series of student statements. After each one there will be a 15 second pause during which time you are to make a good empathic response to what the student has said. After you have been given time to make your response you will hear a good response that the teacher has made. Compare your response to the teacher's. Yours may be better. Remember to concentrate on giving empathic responses, capturing the total meaning and feelings of what has been said.

Practice Statements

1. It's hard always being the new kid in school.

2. Nobody will play with me at recess.

3. I don't know what I am going to do in the future; There are so many things !

4. With the way the world is going it's hardly worth training for a job.

5. I've been looking foward to going into high school but now the time has come I'm not so sure.

6. All these changes happening so fast make me uptight.

7. I always feel sick just before I go on a date.

8. This subject is so stupid; what's the use of studying it anyway?

Posttest

The program will end with you being given the chance to respond to six student statements. Try to do as good a job as possible as your response will demonstrate how well you have mastered this skill. Remember, try to respond with empathic understanding to each of the six different student statements.

1. This stuff we are doing doesn't make any sense.

2. My parents are never home to help me with my homework.

3. I'm so glad, we have 10 whole days without school.

4. My parents have all these plans for me for when I finish school but I'm not so sure.

5. I really hate Mrs. Smith after what happened this morning.

6. No matter what I do I can never get above a 50% average.

That's the end of the program, please now complete the written questions.

DELAYED POSTTEST

Thank you for returning to complete this study. This section will take approximately 15 minutes of your time all together. To start with you will be asked to demonstrate your empathy communication skills by responding to six student statements in the same way that you did before. Try to make good empathic responses that reflect the essence of the student's statements. Here is the first statement.

1. I often think of just quitting school.

2. Our year end party was just the greatest.

3. I'm never going to speak to my boyfriend again.

4. I can't wait until I finish school and get a job.

5. In school I never get time to myself.

6. I always seem to just miss making it on to the team.

That's all. Please shut off the tape-recorder and complete the paper and pencil questions if you have not already done so.

Appendix III

Debriefing Information

The purpose of this study was to investigate different ways of presenting material in self instructional programs. There were three different ways of presenting material that were investigated: (group a) some participants had a taped program in which only good examples of the empathy skill being taught was demonstrated, (group b) some participants had a taped program in which both good and bad examples of empathic responding were demonstrated, (group c) some participants had a taped program in which only bad examples of empathic responding were demonstrated, (they had to figure out what a good empathic response was), (group d) some people did not get a program at all, just the tests and measures that were used.

In regular teaching situations instructors usually just give good examples of the skill or material being taught, as in group (a). However, some research has demonstrated that giving both good and bad examples increases understanding. These researchers argue that having both good and bad examples provides the learner with more information and allows him or her to discriminate. Thus, in this study, group (b) should do better than group (a).

If giving bad examples provides the learner with more information then a learner with just bad examples should do better than a learner with no examples at all. Therefore group (c) should do better than group (d). This study was designed to investigate this issue.

Appendix IV

Conceptual Tests: Forms A and B

Discrimination of Responses FORM A

In the following test there are six student statements. Each is followed by four possible teacher responses. In each case pick out the best empathic response of the four and write a number 1 beside its letter on the answer sheet. Next choose the worst empathic response and place a number 4 beside its letter on the answer sheet. From the remaining two responses choose the best empathic response and write a 2 beside its letter. Write a 3 beside the letter of the remaining response, (in other words rank the four responses). Here is the first response.

1.

With the way things went last year I don't know if I can handle the academic program.

a. Well why don't you give it a try and then if you don't like it you can switch.

b. I get the feeling you didn't work as hard as you could last year and now you are afraid the same thing might happen in the academic program.

c. Things didn't go so well last year and now you are a little unsure and worried about your ability to succeed in the academic program.

d. Perhaps you should consider the vocational program. It is a lot better for getting jobs these days anyway.

2.

I like to hang around with those guys but I don't like some of the things that they do.

a. Some of the things they do I wouldn't like to do either.

b. The activities they want to do are not acceptable to you, is that it?

c. So you have some mixed up feelings right now because you want to be friends with them but you don't want to share in some of their activities.

d. Hmm, that's too bad, maybe they will change if you work on them.

3.

Speaking in class makes me very up-tight.

a. The thought of all those people watching you really makes you nervous and unsure of yourself.

b. You get so nervous you just can't speak, is that it?

c. Don't worry, we all experience those feelings sometimes and they go away after a while.

d. Yes! I have that problem too.

4.

It seems like everybody has plans for me; my parents, my teachers, my friends, everybody--but I don't know what I want to do.

a. Perhaps you could try standing up for yourself and asserting your own wishes.

b. You resent having other people make your plans for you and yet you are feeling lost about your own directions.

c. I know how you feel, I have thirty people who all want different things from me!

d. You are feeling pushed around from people around you and this is preventing you from making your own decisions.

5.

It's ridiculous! Everything has to be done when he wants to do it and the way he wants it done.

a. It makes you furious that it's so one-sided, you would like to call the shots.

b. It really angers you that you have no say in the matter.

c. I know, I find him the same way, he's a real dictator.

d. Why don't you let him know how it makes you feel.

6.

I finally found someone who I can get along with and who accepts me for what I am.

a. Sounds like the type of person you would want to hang on to.

b. That's a really good feeling to have someone to trust and share with.

c. That's great, sounds like you found someone who you can really call a friend.

d. I am really happy for you; I wish I could find somebody like that.

Discrimination of Responses FORM B

In the following test there are six student statements. Each is followed by four possible teacher responses. In each case pick out the best empathic response of the four and write a number 1 beside its letter on the answer sheet. Next choose the worst empathic response and place a number 4 beside its letter on the answer sheet. From the remaining two responses choose the best empathic response and write a 2 beside its letter. Write a 3 beside the letter of the remaining response, (in other words rank the four responses). Here is the first response.

1.

I decided to come and talk to you but now that I'm here I don't know how to start.

a. It's intimidating to tell your concerns to someone else.

b. Well I'll start off then by telling you a few things I think you would be interested in.

c. It's hard starting off but once you begin it will be easier.

d. You are finding it kind of embarrasing talking to someone about your concerns and that's holding you back.

2.

I don't know how my new step-mother and I are going to get along.

a. Sounds like you are starting off negatively already.

b. I am sure it will turn out just fine.

c. You are very worried that things will not turn out between the the two of you.

d. It's a new relationship and you are a little anxious about how it will go.

3.

I am really disgusted with myself, nothing I try turns out right.

a. Try looking of the bright side, things aren't that bad.

b. It sounds like you are not having much success lately and that is getting you down.

c. Things have really been going badly for you.

d. You too? I have been having the worst luck lately.

4.

This is the first time I have had all my assignments finished before the deadline.

a. You must feel pretty good about being ahead of the game.
b. Sounds like you have changed your work habits, good for you.
c. Don't tell me about it, I have loads of work still to do.
d. That must be a real boost to your ego to be caught up in your work.

5.

My parents are so rigid; they just don't understand me.

a. It sounds like you are pretty angry at your parents for being so strict.
b. It's frustrating that your parents won't see your point of view.
c. Have you tried talking to them about the problem? That's always a good place to start.
d. They probably do understand you, they are just worried about you.

6.

I am going to try hard this year to raise my grade point average.

a. It sounds like you are looking foward to the challenge of working for better grades.
b. I always tell myself that but it never works out.
c. You want to get a higher average this year.
d. That's good that you want to get better grades.